UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,701	08/30/2001	Katsuyuki Oohara	011107	6227

23850	7590	06/17/2004

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EXAMINER
CHANG, ERIC

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 August 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-5_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-5_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 August 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _3_.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-5 are pending.

Specification

2.   The abstract of the disclosure is objected to because of the incorporation of figure

reference numbers. Correction is required. See MPEP § 608.01(b).

Claim Objections

3.   Claims 3 and 4 are objected to because of the following informalities: they refer to

"other control unit" and "other control units" in lines 3 of their respective claims. However,

lines 1-2 of claim 1 on which claims 3 and 4 depend only provides for "a control unit for

executing data communication between itself and another control unit". Appropriate correction

is required.

4.   Claim 3 is objected to because of the following informalities: it is unclear what the

phrase "even the" on line 4 of the claim means. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

6,266,780 to Grundvig et al., in view of U.S. Patent 6,311,296 to Congdon, and in further view

of U.S. Patent 6,459,705 to Cheng.

7.   As to claim 1, Grundvig discloses a control unit for comprising: a CPU [col. 1, lines 7-

10]; a high frequency oscillator for producing first clock pulses for operating the CPU at a first

frequency [col. 1, lines 20-23]; a low frequency oscillator for producing second clock pulses for

operating the CPU at a second frequency which is lower than said first frequency [col. 1, lines

23-25]; and an exchanging means for exchanging clock pulses for operating the CPU from said

first clock pulses to said second clock pulses when a prescribed condition is satisfied, thereby

shifting the CPU to a low power consumed state [col. 1, lines 31-35]. Grundvig teaches all of

the limitations of the claim, but does not teach that errors in the operation of the low power

oscillator are detected.

Congdon teaches an abnormality detecting means for detecting abnormality of a clock

oscillator [col. 12, lines 55-67]. Although Congdon specifically teaches detecting abnormalities

in the operation of a bus clock, it would be obvious that the teachings of Congdon be applied to

detecting abnormalities in other oscillators in relationship to a reference clock, substantially as

claimed.

At the time that the invention was made, it would have been obvious to a person of

ordinary skill in the art to employ the clock abnormality detection as taught by Congdon. One of

ordinary skill in the art would have been motivated to do so to detect if a clock oscillator was malfunctioning.

It would have been obvious to one of ordinary skill in the art to combine the teachings of the cited references because they are both directed to the problem of using multiple clock systems in a computer. Moreover, the clock abnormality detection means taught by Congdon would improve the robustness of Grundvig because it allowed errors with clocks in other parts of the computer system, such as the bus, to be detected.

Grundvig and Congdon teach all of the limitations of the claim, but do not teach that exchange stopping means for stopping exchange of the clock pulses by said exchanging means if the said abnormality detecting means detects the abnormality.

Cheng teaches that the CPU is brought out of the low power mode if such an error in the oscillator was detected [col. 1, lines 51-57].

At the time that the invention was made, it would have been obvious to a person of ordinary skill in the art to employ the CPU waking mechanism as taught by Cheng. One of ordinary skill in the art would have been motivated to do so that the CPU can be monitored during a low-power state.

It would have been obvious to one of ordinary skill in the art to combine the teachings of the cited references because they are both directed to the problem of monitoring for problems with a computer system in a low-power state. Moreover, the CPU waking means taught by Cheng would improve the utility of Grundvig and Congdon because it allowed the computer to report a change in status during a low-power mode to a user or other supervisory entity.

8.   As to claim 2, Congdon discloses said abnormality detecting means includes a counting

means for counting the second clock pulses produced from said oscillator while said CPU is

operated at the first frequency [col. 12, lines 50-67, and col. 13, lines 24-67]. Congdon teaches

that counting means are used to determine if an oscillator abnormality is detected in relation to a

reference clock, substantially as claimed.

9.   As to claims 3-4, Cheng discloses said exchange stopping means sends an exchange

request signal to other control units so that they are shifted into the low power consumed state

even if the CPU corresponding to said exchange stopping means cannot be shifted into the low

power consumed state [col. 1, lines 51-56]. Cheng teaches that the components of a computer

system can be placed into a low-power state even in the event of a detected error, such as an

oscillator anomaly, substantially as claimed.

10.   As to claim 5, Grundvig, Congdon, and Cheng discloses a control unit for placing a CPU

into a low-power mode by switching to a low-frequency oscillator, and waking the CPU from the

low-power mode if an anomaly in the low-frequency oscillator is detected, substantially as

claimed. Because Grundvig, Congdon, and Cheng teach the control unit, they teach a multiplex

communication system comprising such control units, substantially as claimed.

Conclusion

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Eric Chang whose telephone number is (703) 305-4612. The

examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynne Browne can be reached on (703) 308-1159. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ec
May 7, 2004

REHANA PERVEEN
PRIMARY EXAMINER